TENNESSEE

DIVISION OF WATER POLLUTION CONTROL

FY-2009 604(b) WORK PLAN

for

AMERICAN RECOVERY AND REINVESTMENT ACT

June 10, 2009

Tennessee Department of Environment and Conservation
Division of Water Pollution Control
6th Floor, L&C Annex
401 Church Street
Nashville, Tennessee 37243-1534

FY 2009 Section 604(b) Grant Activities

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Project Cost Estimates

1.	Mercury Deposition	$117,200
2.	Erosion Prevention Manual	$111,595
3.	Hydrologic Determinations Training	$116,294
	SUB-TOTAL	$345,089
4.	Southeast Tennessee D.D.	$ 60,000
5.	Greater Nashville Regional Council	$110,000
6.	First Tennessee Development District	$ 60,011
	SUB-TOTAL	$230,011
	TOTAL	$575,100

Tennessee ARRA Program Administration

The Division of Water Pollution Control does not intend to allocate any of the American Recovery and Reinvestment Act (ARRA) funds for program administration or indirect charges. All funds will be directed to water quality planning projects and pass-thru program funding for development districts in Tennessee. Program oversight and reporting will be performed by division staff without charging time and effort against this grant program.

All Tennessee Department of Environment and Conservation (TDEC) divisions that receive ARRA funds are required to make weekly reports to the Tennessee Recovery Act Management (TRAM) office via reports to our Division of Fiscal Services. The information is compiled by Tony Mathews (DFS) who transmits the weekly reports to the TRAM office for review by our Governor's staff prior to transmission to the federal ARRA staff.

604(b) ARRA Grant Activity #1

Mercury Deposition and Selenium Fish Tissue Study

The Division of Water Pollution Control is planning to use 604(b) planning and economic stimulus money to field test the use of a mercury air deposition model for planning future fish tissue collections as well as provide data for testing of proposed selenium criteria.

Amount Requested $117,200.00

Site reconnaissance and fish sample collection (33 sites x $3064) = $101,112.00
Mercury and Selenium Sample Analysis (33 sites x 4 samples x $122.00) = $16,104.00

Agency: Division of Water Pollution Control
Tennessee Department of Environment and Conservation (TDEC)
6th Floor L&C Annex
401 Church Street
Nashville, TN 37243

Grant Contact: Garland Wiggins, Garland.Wiggins@tn.gov 615-532-0633
Project Contact: Debbie Arnwine, Debbie.Arnwine@tn.gov 615-532-0703

Environmental Innovations

a. Cooperative effort between three state divisions (air, water and health) to locate lakes where people and wildlife may be exposed to mercury from eating fish. This is the first time the state is specifically targeting air pollution sources that are polluting waterbodies.

b. Field testing of a new computer model that predicts location of mercury deposition from air sources. If the model proves accurate, it will be used as a future tool for locating contaminated waterbodies as well as sources that need additional environmental controls to prevent pollution.

c. Using selenium found in fish tissue to develop water quality criteria and NPDES permit limits. Past criteria have been based on the amount found in the water column. Not all forms of selenium found in water are toxic. Basing permit limits on this value may create unnecessary restrictions and costs to permitted discharges. Basing criteria on selenium found in fish tissue will target only the selenium that is available to wildlife. The state does not currently have any selenium data from whole body fish.

Economic Stimulus

a. This activity will save jobs.

This money will help the Department of Health Environmental Laboratories retain 3 full-time positions (2 biologists and 1 chemist) for the equivalent of one year. This laboratory is dependent on cost recovery from the Division of Water Pollution Control for contracted services. Due to budget cuts, this is the only field work that will be contracted to that agency in FY 2010.

Position break-down:

5 biologists for 6 months (sampling, sample processing, paperwork, site reconnaissance, paperwork, boat and equipment maintenance, report preparation).

1 chemist for 6 months (sample digestion, sample analyses, data QC, sample logging, instrument calibration, glassware preparation, data reporting).

Total staff time committed = 36 months

b. This activity will stimulate future economic activity.

Fish tissue monitoring by the department is currently focused on large reservoirs with most of the monitoring conducted by federal agencies. This study will expand the state program to include smaller lakes which will require future planning, monitoring and laboratory analysis. It is anticipated that 1 manager, 2 biologist and 1 chemist position will be employed for approximately 5 months annually on this activity to maintain a monitoring program.

c. This activity will result in long-term public benefits by investing in environmental protection that will provide long–term economic benefits.

Recreational fishing is an important part of the local economy in many areas of the state. Local businesses profit from the sale of bait, supplies, beverages, food, gasoline, ramp fees, boat rentals and hotel rooms. Assuring that fish are safe to eat and improving water quality in lakes, helps promote these businesses.

Second, switching from a water column to a fish tissue based selenium criteria will help alleviate any unnecessarily stringent restrictions on some dischargers which will reduce operating costs. This will encourage business growth and possibly reduce lay-offs.

d. **This activity was selected because it maximized the number of jobs saved for the amount of federal dollars obligated while at the same time providing essential environmental information.**

The project is labor-intensive with relatively small supply costs and can be completed with exiting equipment. The majority of federal dollars will be spent on keeping positions that may have been lost due to budget cuts. At the same time it provides environmental information in two important areas that would not have been completed using existing state funds.

Project Goals

1. Establish 33 fish monitoring stations to test the accuracy of the REMSAD air deposition model for testing mercury contamination in fish.
2. Determine whether model accurately predicts contaminated and clean waterbodies.
3. Determine whether mercury levels in fish fillets exceed safe levels for human consumption.
4. Locate probable sources of contaminants.
5. Build database of selenium levels in whole body fish tissue to protect fish-eating wildlife.

Specific Objectives for the Project Goals

1. Map waterbodies that have been predicted by REMSAD air deposition model for being contaminated by mercury.
2. Contract to Tennessee Department of Health to collect representative game fish (2 species) at targeted waterbodies. Collection will include 10 fish from each species. Five from each species will be filleted and analyzed as a composite to test human exposure and five from each species will composited and analyzed as whole fish to test wildlife exposure for a total of four samples from each site.
3. Any site that is not sampleable will be replaced with a site in the same depositional area.
4. Analyze amount of mercury to test accuracy of model.
5. Use information for 305(b)/303(d) water body assessments.
6. Issue fish consumption advisories on waterbodies where fish have unsafe levels of mercury. Publish information on website, fishing regulation brochures and signs at public access points.
7. Work with Division of Air Pollution Control to locate sources of contaminants.
8. Analyze amount of selenium in whole body fish to begin database that will be used for development of fish tissue based criteria and NPDES limits.
9. Use results to plan future mercury and selenium monitoring needs.
10. All sampling and analysis will follow Tennessee Department of Health Environmental Laboratories Standard Operating Procedures. Quality Control/Quality Assurance will follow Tennessee Department of Environment and Conservation Quality Assurance Project Plan for 106 monitoring activities. Chain of custody will be maintained on all samples.

11. Progress reports will include number of stations collected, information on any stations that needed to be replaced, data results and number of man-hours spent on the project.

12. The final report will be posted on the department's website and will also be available to the public by hard copy. Results will be presented at professional meetings including the Tennessee Water Resources Symposium and the Southeastern Water Pollution Biologists Association.

Timeline

July 2009 – November 2009: Collect and process fish.

July 2009 – May 2010: Analyze fillets and whole body fish for Mercury and Selenium (Samples to be analyzed within 30 days of collection when possible).

June 2010 – December 2010: Interpret data and generate final report.

Site List

Station ID	Lake/Stream	Location	County	Lat	Long
DRAKE1T0.1SR	Mallard Point Park Lake on Drakes Creek	Saunders Ferry Road in Hendersonville	Sumner	36.29119	-86.6103
BLEDS004.2SR	Bledsoe Creek Embayment of Old Hickory Lake	U/S Hwy 25	Sumner	36.39859	-86.34297
REESE000.0SR	Reese Farm Lake	Off South Dry Fork Rd	Sumner	36.45439	-86.35499
BRICH002.0HU	Big Richland Creek embayment of Ky Lake.	Upper end of embayment	Humphreys	36.17370	-87.87346
TRACE002.0HU	Trace Creek embayment of Ky Lake	Upper end of embayment	Humphreys	36.05618	-87.93569
CROOK001.4BN	Bass Bay of Ky Lake	Upper end of embayment	Benton	36.26480	-87.98049
BEAVE001.6BN	Beaverdam Creek	Upper end of embayment	Benton	36.06520	-88.03190
LCOVE001.0CA	Little Cove Creek	Upper end of embayment	Campbell	36.286	-84.188
COVE017.0CA	Cove Lake	Cove Lake State Park	Campbell	36.3031	-84.218

Station ID	Lake/Stream	Location	County	Lat	Long
YARNE000.0AN	Yarnell Branch Pond	Off Ridge View Drive near Clinch River Mile 55, SW of Clinton	Anderson	36.06664	-84.15278
BUTCH000.0AN	Butcher Lake	Off Old Emory Rd near Clinch River Mile 50, Oak Ridge	Anderson	36.04239	-84.1849
OOSTA005.8MM	Oostanaula Mill Dam	Near USGS stream guage	McMinn	35.32780	-84.70502
NMOUS1T000.2MM	Athens Regional Park Fishing Lake	Athens Regional Park	McMinn	35.45919	-84.63915
BATTL1T0.1MI	Unnamed Lake off Battle Creek	Between Sequatchie Valley Golf and Country Club and Battle Creek.	Marion	35.05236	-85.71555
DUFFY000.0HY	Duffy Lake	Off Eubanks Road	Haywood	35.71930	-89.32385
WARDL000.0LE	Wardlow Pocket	Chickasaw National Wildlife Refuge	Lauderdale	35.86867	-89.70903
OPEN000.0LE	Open Lake	Adjacent to Chickasaw National Wildlife Refuge	Lauderdale	35.84704	-89.61205
MEMPH000.0SH	Memphis Lake	Chickasaw Gardens	Shelby	35.12789	-89.9618
SCOTT003.5SH	Garner (Lakeland) Lake	Lakeland community NE of Memphis	Shelby	35.24029	-89.73598
ROBCO000.0SH	Robco Lake	Off West Holmes Rd in Memphis	Shelby	35.00448	-90.12179
DOLAN001.4SU	Kingsport (Bays Mountain) Reservoir	Bays Mountain Park	Sullivan	36.50757	-82.61444
LONG002.7RN	Greenbrier Lake	Off Main Street (Distillery Rd) outside of Greenbrier community.	Robertson	36.43358	-86.78324
DRY001.7HD	Dry Creek embayment of Pickwick Reservoir	Dry Creek Rd.	Hardin	35.02690	-88.16809
OCOEE031.0PO	Ocoee Lake #3	Near Tumbling Creek	Polk	35.0271	-84.4499

Station ID	Lake/Stream	Location	County	Lat	Long
BSAND007.4HN	Big Sandy Embayment of Kentucky Lake	D/S Poplar Creek	Henry	36.3434	-88.0938
BSAND015.1BN	Big Sandy Embayment of Kentucky Lake	Downstream of Levee at Dewatering Area.	Benton	36.248	-88.105
HOLST055.0GR	Cherokee Reservoir	At dam	Grainger	36.1911	-83.4646
HOLST076.0HA	Cherokee Reservoir	At Hwy 25e	Hamblen	36.2713	-83.2771
ELK150.0FR	Tims Ford Reservoir	Maple Bend	Franklin	35.2139	-86.1849
ELK135.0FR	Tims Ford Reservoir	Marble Plains	Franklin	35.2169	-86.2773
GREEN015.1WE	Green River	Off HWY 13	Wayne	35.28750	-87.763056
OBED021.1CU	Obed River	Potters Bridge	Cumberland	36.0729	-84.90308
EMORY027.7MG	Emory River	Nemo Bridge	Morgan	36.0689	-84.6623

604(b) ARRA Grant Activity #2

Erosion Prevention and Sediment Control Handbook and Training Program Development

Proposal:

The Division of Water Pollution Control is proposing to use ARRA 604(b) planning and economic stimulus funding to revise the existing Tennessee Erosion Prevention and Sediment Control Handbook and Training Program.

Agency: Division of Water Pollution control
Tennessee Department of Environment and Conservation (TDEC)
6th Floor L&C Annex
401 Church Street
Nashville, TN 37243

Grant Contact:	Garland Wiggins, Garland.Wiggins@tn.gov	615-532-0633
Project Contact:	Robert Karesh, Robert.Karesh@tn.gov	615-253-5402

Amount Requested:

$111,595

Background:

In 2002, TDEC Water Pollution Control developed and made available the Tennessee Erosion Prevention and Sedimentation (EPSC) Handbook. This handbook provides valuable Best Management Practice (BMP) design guidance to the regulated community performing activities under the Construction General Permit (CGP), and has been extensively utilized as course material in the TN Erosion Prevention and Sediment Control Training and Certification Program (TNEPSC). The Handbook has also served to promote consistency and statewide standardization of successful construction BMPs.

In an effort to keep the Handbook current, TDEC initiated a significant revision in September 2008. The revision has progressed incrementally, based on funding availability and allocation. The current funding allocation covers revision efforts till June 30, 2009. This proposal is for funding that will be utilized after July 1, 2009, and through the expected March 31, 2010 completion date.

The revised Handbook will include information specific to updated CGP program requirements, and the latest in EPSC BMP design and application. Likewise, this proposal also includes an appropriate revision to the current Level I and Level II training courses, and new training module development.

Project Scope:

Task 1: Revise existing TN EPSC Handbook

The handbook revision will be completed through a primary development committee, with assistance provided by a series of stake-holder meetings. Stakeholders will include municipalities, professional associations, universities and non-profit water quality groups. Target audience is primarily SWPPP designers and engineers.

The expected timeline for delivery is December 2009.

Task 2: Revise Level I - Fundamentals of EPSC for Construction Sites

Level I Fundamentals is a 1-day foundation-building course for individuals involved in land-disturbing activities. The course has been facilitated by the University of Tennessee-Water Resources Research Center (UT-WRRC) through the Tennessee Erosion Prevention and Sediment Control Training and Certification Program (TNEPSC). The course will be revised to incorporate standard practices identified in the revised EPSC Handbook and to increase its focus on instruction critical to individuals who perform inspection requirements identified in the CGP.

The expected timeline for delivery is February 2010.

Task 3: Revise Level II - Design Principles for EPSC for Construction Sites

This advanced two-day course is designed for engineers, environmental designers, plan preparers and reviewers. Detailed instruction is given on the engineering technologies needed to control stormwater on a construction site. This course will also be revised to incorporate standard practices identified in the revised EPSC Handbook and deliver the tools needed for developing an acceptable, working EPSC plan.

The expected timeline for delivery is February 2010.

Task 4: Develop 2 New Training Modules

In addition to revising the existing training modules, 2 new training modules will be developed: CGP Permit 101 module and MS4 Training module. The CGP Permit 101 module will contain CGP basics and will be designed for developers and builders. While the Fundamentals module noted above will also cover some of this material, the Permit 101 module will be designed for a broader audience and the emphasis will be on understanding the CGP conditions.

The MS4 Training module will focus on training MS4 staff on plans review, inspection techniques, record keeping and other policies and procedures that MS4s may need for a comprehensive EPSC program or to become a Qualified Local Program.

The expected timeline for delivery is March 2010.

Support and Promotion of Economic Stimulus in Tennessee:

This activity was selected because it maximized the number of jobs created and saved for the amount of funding requested, while at the same time providing essential environmental protection.

a. Description of type and number of jobs created:

Funding of this proposal will directly create 6 positions (Senior Program Manager, Staff Scientist, Project Manager, Principle Scientist, Computer Aided Design Specialist, and Administrative Support Staff) for the revision Handbook and training module revisions. Total staff time for these positions is estimated at 1625 hours, or 0.91FTE (@1785hr/FTE).

Funding of thesis proposal will provide revised training materials for the continued delivery of the TNEPSC Training and Certification program. This proposal will result in retaining 5 FTE positions, including a Senior Program Manager, Senior Instructors (including Dr. Bruce A. Tschantz, P.E., Professor Emeritus of the UT Civil & Environmental Engineering Department, and Dr. John R. Buchanan, P.E., Associate Professor of the UT Biosystems), and Administrative Support Staff. To date, the TNEPSC program has trained over 12,000 professionals under the Level 1 module, and 1476 professionals under the Level 2 module. The TNEPSC budget is funded through the collection of student fees.

b. Description of how funding this proposal will stimulate future economic activity:

The Construction General Permit requires that all construction activities performed under the permit must be inspected by an individual who is certified under the Level I training module. Maintaining the availability of the TNEPSC will provide the certified inspectors required for future development to occur.

c. Long-term public benefits by investing in environmental protection that will provide long–term economic benefits:

Sedimentation is the number one pollutant that has been identified as causing impairment to waterways in Tennessee. One of the largest sources of sedimentation is uncontrolled construction activities. This proposal will result in water quality protection by providing qualified certified inspectors for future construction activities. Properly inspected and maintained construction activities not only result in water quality protection, but also long-term economic benefits. For example, water quality equates to potential wastewater capacity and drinking water availability, which are necessary for jurisdictional growth. Water quality also plays a key factor in water utility treatment costs.

Timeline and Budget:

The attached spreadsheet identifies the project deliverables, as well as expected timeline and budget. Note that the timeline assumes monthly development committee meetings and up to five stakeholder meetings.

TDEC-WPC ARRA 604b Proposal - EPSC Program Revision

				July 2009 (hrs)	August 2009 (hrs)	September 2009 (hrs)	October 2009 (hrs)	November 2009 (hrs)	December 2009 (hrs)	January 2010 (hrs)	February 2010 (hrs)		Subtotal	Total
Task:	**Development Committee**													
	Deliverables			- monthly meeting	- monthly meeting	- monthly meeting	- monthly meeting	- monthly meeting	- monthly meeting	- monthly meeting				
		SPM	129.50	14	14	14	14	14	14	14	10	13,986.00		
		Staff Sci	77.50									0.00		
		Admin	48.00									0.00		
		PM	119.00	8	8	8	8	8	8	8	8	7,616.00		
		Princ	146.00									0.00		
		CADD	71.00									0.00		
		Expenses	200.00									207.00		
													21,809.00	
Task:	**Manual Revision**													
	Deliverables			70% draft Ch2, Ch5	100% final Ch2, Ch5 70% draft Ch4, Ch7.1 - 7.4	100% final Ch4 70% draft Ch7.5 - 7.8	100% final Ch7.5 - 7.8 70% draft Ch3, Ch6	100% final Ch3, Ch6 70% draft Ch8, Ch9, Ch10, Ch11	100% final all chapters					
		SPM	129.50	40	40	40	40	40	40			31,080.00		
		Staff Sci	77.50	40	40	40	40	40	40			18,600.00		
		Admin	48.00									0.00		
		PM	119.00	10	10	10	10	10	10			7,140.00		
		Princ	146.00	4	4	4	4	4	4			3,504.00		
		CADD	71.00	8	8	8	8	8	8			3,408.00		
		Expenses	400.00									414.00		
													64,146.00	

Task:	**Stakeholder Mtgs**												
	Deliverables		PP: Design Criteria	PP: Existing BMP culling	PP: New BMP acceptance	PP: Critical site design	PP: Design tools						
	SPM	129.50	24	24	24	24	24				15,540.00		
	Staff Sci	77.50	16	16	16	16	16				6,200.00		
	Admin	48.00	2	2	2	2					384.00		
	PM	119.00	10	10	10	10	10				5,950.00		
	Princ	146.00	2	2	2	2	2				1,460.00		
	CADD	71.00									0.00		
	Expenses	1500.00									1,552.50		
												31,086.50	
Task:	**Training Modules**												
	Deliverables						90% draft: Inspector training 90% draft: Permit 101	90% draft: SWPPP design	90% draft MS4 training	100% final: all modules			
	SPM	129.50				40	40	36	24	16	20,202.00		
	Staff Sci	77.50				60	60	80	40		18,600.00		
	Admin	48.00				16	4	8	4	4	1,728.00		
	PM	119.00				8	24	40	40		13,328.00		
	Princ	146.00				1		1		4	876.00		
	CADD	71.00				16	8				1,704.00		
	Expenses	1000.00									1,035.00		
												57,473.00	$174,514.50

Gross Total	$174,514.50
Less Current Work Order (Through June 30, 2009)	$62,919.00

Notes:

SPM Senior Project

	Manager		
Staff Sci	Staff Scientist	Balance Requested	$111,595.50
Admin	Administrative assistant		

604(b) ARRA Grant Activity #3

Development of Training Program for Implementation of Hydrologic Determinations in Tennessee

The Division of Water Pollution Control will use funds from the 604(b) portion of the American Recovery and Reinvestment Act to develop a "Stream Determination Training and Certification Program", in order to provide consistent training to Division staff and third-party individuals engaged in the process of making scientifically valid stream determinations in Tennessee.

Partners in this effort will be the following.

> Dr. Tim Gangaware – Water Resources Research Center, The University of Tennessee, Knoxville TN

Contact Person, TDEC: Lawrence.Bunting@tn.gov 615-532-0665

Amount Requested: $116,294

Introduction:

The State of Tennessee has a stewardship responsibility to protect the state's waters. Section 604(b) and 303(e) set forth a planning responsibility for the state which includes assessment of the state's surface waters to determine its quality and provide the basis for planning and regulatory action. The most basic assessment of the state's water is the determination of whether a water course is state waters or not. This controls the assessment, planning and subsequent regulatory standards that are applied.

The Division of Water Pollution Control was recently directed by the 2009 Tennessee General Assembly (State Legislature) to develop a "Stream Determination Training and Certification Program" in order to allow such determinations to be made by third party individuals, as well as by trained state employees. The development of the training program is to provide consistent and clear information for making determination of the state's waters. Through this training the State of Tennessee is expected to eliminate inconsistencies in determining where streams begin and thus establish how we plan to protect and regulate them.

While the recent legislation in Tennessee provides for third parties to assist the state in its determinations of state waters, it will be necessary for both TDEC employees and private consultants to be trained, in order to meet the instructions of the general assembly. The identification of streams in Tennessee must be made consistently so that planned growth is supported by sound technical information. Clear delineations of streams are critical to our planning process, the creation of effective TMDL's and development of water quality standards and regulations. The premise of any planning process must include clear and consistent determinations of the waters of TN.

Water pollution control regulations in Tennessee are based upon determinations of what are and are not considered to be waters of the state. If a point source discharge is made to waters of the State or to a drainage course leading to waters of the state, it is determined to be a point source that should be regulated by State rules and regulations. Constraints imposed upon a discharger by a permit depend upon whether the point of discharge is to a stream or a wet weather conveyance that leads to a stream. Therefore, the first step of the NPDES permit process is to correctly determine whether a proposed discharge point is to a stream or not. Similarly, the permit status for physical alterations to a watercourse, or non-point source discharges from a construction site depends upon whether a jurisdictional stream is present.

In many cases, the presence of a stream is an easy call. However, in headwater areas, areas containing intermittent streams, or areas where historic alterations have taken place, the identification of a stream requires technical analysis and careful, experienced evaluation of the situation to make a reliable determination. Such determinations are vital to the protection of waters of the state via the permitting process.

Tennessee has historically used the Division of Water Pollution Control technical staff to make stream determinations. Staff must identify which waters of the state are appropriate for regulation by permit under the Tennessee Water Quality Control Act and the federal Clean Water Act. This can sometimes be a time consuming process, especially when the determination is not an easy or clear cut process due to climatic factors, atypical features, or human impacts. As such, the division has been regularly criticized by various sectors of the construction industry who view time delays and perceived inconsistencies in jurisdictional determinations as costly additions to their projects.

During the 2009 legislative session, the Tennessee General Assembly passed a bill (SB 0632) that allows stream determinations to be performed via third party evaluations. This new Act requires the development of a stream determination training program not only for division personnel, but that also results in certification of qualified third-party individuals who propose to perform stream determinations and provide data and reports to the Division of Water Pollution Control for review and approval.

This certification process must be designed in such a fashion that it will serve to speed up the evaluation and stream determination process. To maintain reliable determinations of state waters for regulatory purposes, the state must institute training and certification for third parties so the quality of the evaluations can be maintained.

The proposed project will develop a curriculum and course materials for training qualified hydrologic professionals in making accurate determinations based on the most current regulatory statutes and science. The course will also provide guidelines for submitting reports for division review and approval. As a part of our planning for third party stream evaluations, this proposed

project is designed to develop a training course, certification procedures, procedures for de-certification and quality controls. Training material will include a written test and field practices that will have to be completed acceptably in order to obtain certification to perform this task. Once the program has been established by the division through a Tennessee Institution of higher learning, the course will charge a fee and should be self-sustaining through those fees charged.

The course will enable more consistent determinations of streams in Tennessee and will have some of the workload passed to the third parties rather than state regulatory staff, although state personnel will retain oversight of the process. Once the third party evaluations are implemented in Tennessee, it will allow quicker development of permits and general permit coverage which saves costs for those seeking permits. The approach is expected to be a more cost-effective way to regulate the permit applicants and will continue to protect water quality standards.

The first training class will be attended by experienced State personnel who will critique the course offerings and provide information designed to aid in refinement of the course, prior to being made available to third-party trainees.

Milestones	
15-Nov-09	sub-recipient grant agreement developed with UT-Knoxville.
15-Mar-10	procedures and draft training course material developed.
31-May-10	Initial trial course with field practice completed using TN WPC staff as students.
29-Oct-10	Course finalized and scheduled for 3rd party participation.
31-May-11	Final report due on courses including copy of syllabus, persons trained.

Tennessee Hydrologic Delineation Training Course

Basic Tenets & Parameters of Class

HDT Course is designed to provide a basic understanding of the underlying scientific principals, the legal jurisdictional ramifications, and the practical investigative techniques surrounding the delineation of hydrologic features in Tennessee.

HDT Course is geared towards professionals working in state government agencies, private consulting firms, and local Stormwater Management agencies that deal with the identification of surface water features in Tennessee. It is anticipated that individuals participating in the HDT class will have an educational background in geology, hydrology, or biology, and/or significant work experience in a related field.

After establishment of the HDT course, hydrologic determination confirmation requests to TDEC will require information submittals from individuals who have successfully completed the HDT course ("certified" individuals). These submittals will be reviewed by certified TDEC staff, who may then simply approve / confirm the delineation package as submitted, or may field-verify selected features if conditions warrant.

Although jurisdictional wetlands will be briefly discussed, the HDT is not a wetland course, and is not intended to replace existing TVA and USACE wetland training classes.

The HDT course will be a mix of classroom work and field training. The final test required for successful completion will be robust, and will include a written portion and field practical.

The HDT course will be facilitated by selected regional University faculty, in conjunction, at least initially, with experienced TDEC personnel focusing on selected topics (e.g. regulatory language and definitions, and Field Delineation of Hydrologic Features).

Due to time constraints, the HDT course cannot cover all types of "problem" features in detail. The main focus will be on basic, relatively undisturbed natural channels / hydrologic features.

The HDT course will be offered regionally in at least the 3 grand divisions of the State. While there will likely be some differing focus on the stream types locally present in a given course's region, the course is intended to provide the basic training needed to evaluate streams statewide.

Draft Outline of Curriculum Topics

1) Scientific definitions / terms related to hydrologic features
    - Watershed, headwaters, stream, wetland, etc
    - The errors inherent in existing maps
2) Jurisdictional definitions, rules, and regulations related to hydrologic features
    - State vs. Federal
    - The TDEC HD flow chart
3) Basic Stream Hydrology
    - How streams form. The runoff process. Storm flow vs. Base flow, and the role of each.
    - How channels are maintained. Basic geomorphology (Rosgen, et al.).
    - Ephemeral vs. Intermittent vs. Perennial. Characteristics of each.
    - Headwaters in various physiographic regions. The role of geology. The role of historic land uses.
4) Basic Stream Ecology
    - Stream Continuum concept.
    - Role of headwater streams in watersheds. Classification schemes. Prevalence & contribution of headwaters (nutrient processing, etc)
    - Basic identification of Macrobenthos (indicator organisms).
5) Field Delineation of Hydrologic Features
    - How and when to use secondary indicators
    - Hydrologic indicators
    - Geomorphic indicators
    - Biologic indicators
    - How to evaluate each feature in the field, using the TDEC HD data form

6) Problem Sites : Altered features, Urban streams, Agricultural effects

- How to deal with the disruption of field indicators

7) Submittal of Hydrologic Determination Confirmation requests to TDEC

- Format and information needed
- Preferred timing of submittals
- Appeal process

Proposed Course Schedule

Day 1 : 10:00 am – 5:00 pm. Classroom work only. Topics 1-4, introduction to topic 5.

Day 2 : 8:00 am – 5:00 pm. Primarily field work. Examination of various hydrologic features, applying the concepts of Field Delineation of Hydrologic Features.

Day 3 : 8:00 am – 3:00 pm. Wrap-up of classroom topics, including discussion of previous day's fieldwork. Written Test. Field Practical.

Budget Projection

Contractual – University of Tennessee/Water Resources Research Center	$116,294
TOTAL	$116,294

Economic Benefits of Tennessee's ARRA Program.

Mercury Deposition and Selenium Fish Tissue Study

Economic Stimulus

a. This activity will save jobs.

ARRA funds will help the Department of Health- Environmental Laboratories retain 3 full-time positions (2 biologists and 1 chemist) for the equivalent of one year.

Total staff time committed = 36 months

b. This activity will stimulate future economic activity.

Fish tissue monitoring by the department is currently focused on large reservoirs with most of the monitoring conducted by federal agencies. This study will expand the state program to include smaller lakes which will require future planning, monitoring and laboratory analysis. It is anticipated that 1 manager, 2 biologist and 1 chemist position will be employed for approximately 5 months annually on this activity to maintain a monitoring program.

c. This activity will result in long-term public benefits by investing in environmental protection that will provide long–term economic benefits.

Recreational fishing is an important part of the local economy in many areas of the state. Local businesses profit from the sale of bait, supplies, beverages, food, gasoline, ramp fees, boat rentals and hotel rooms. Assuring that fish are safe to eat and improving water quality in lakes, helps promote these businesses.

Second, switching from a water column to a fish tissue based selenium criteria will help alleviate any unnecessarily stringent restrictions on some dischargers which will reduce operating costs. This will encourage business growth and possibly reduce lay-offs.

d. **This activity was selected because it maximized the number of jobs saved for the amount of federal dollars obligated while at the same time providing essential environmental information.**

The project is labor-intensive with relatively small supply costs and can be completed with exiting equipment. The majority of federal dollars will be spent on keeping positions that may have been lost due to budget cuts. At the same time it provides environmental information in two important areas that would not have been completed using existing state funds.

Erosion Prevention and Sediment Control Handbook and Training Program Development

Economic Stimulus

a. This activity will save jobs.

This project will directly assist the University of Tennessee in the retention of staff and graduate positions. Total staff time for these positions is estimated at 1,625 hours, or 0.91 FTE (@ 1,785 hrs/FTE).

b. This activity will stimulate future economic activity.

The Construction General Permit requires that all construction activities performed under the permit must be inspected by an individual who is certified under the Level I training module. Maintaining the availability of the TNEPSC will provide the certified inspectors required for future development to occur.

c. This activity will result in long-term public benefits by investing in environmental protection that will provide long–term economic benefits.

This proposal will result in water quality protection by providing qualified certified inspectors for future construction activities. Properly inspected and maintained construction activities not only result in water quality protection, but also long-term economic benefits.

We anticipate this program will continue in Tennessee for approximately 10 years before requiring future updates.

d. **This activity was selected because it maximized the number of jobs saved for the amount of federal dollars obligated while at the same time providing essential environmental information.**

This project will provide training opportunities to developers, contractors and their employees who are employed in land disturbing activities in Tennessee. The previous training materials and programs were in use for seven (7) years and provided training to approximately 13,500 individuals. We anticipate this new program will be as well received and used for years to come.

Development of Training Program for Implementation of Hydrologic Determinations in Tennessee

Economic Stimulus

a. This activity will create jobs.

This project will directly assist the University of Tennessee in the retention of staff and graduate positions. This project will be performed in addition to the "Erosion Prevention and Sediment Control Handbook and Training Program Development" project described above.

b. This activity will stimulate future economic activity.

The Division of Water Pollution Control was recently directed by the 2009 Tennessee General Assembly (State Legislature) to develop a "Stream Determination Training and Certification Program" in order to allow such determinations to be made by third party individuals, as well as by trained state employees. The development of the training program is to provide consistent and clear information for making determination of the state's waters. This training program is expected to continue for years to come in order to eliminate inconsistencies in determining what are and are not streams that are subject to permit requirements and water quality regulations.

The training program will be provided by staff of the University of Tennessee on an annual basis for as long as there is a demand for the training and certification program as defined by the Tennessee General Assembly.

c. This activity will result in long-term public benefits by investing in environmental protection that will provide long–term economic benefits.

This proposal will result in long-term water quality protection by providing qualified staff and third-parties trained in making hydrologic determinations that will impact point and non-point source construction projects in Tennessee. These benefits will not only result in water quality protection, but will assist in long-term economic benefits by insuring the proper determination was made early in the construction and permit process, thereby saving time and financial resources.

d. **This activity was selected because it maximized the number of jobs saved for the amount of federal dollars obligated while at the same time providing essential environmental information.**

The long term benefit of this training program will be improved time savings in making stream determinations in Tennessee. This should result in shortening the time required to start road building and construction projects, thereby, saving time, money and developer frustration with the stream determination process in Tennessee.

604(b) ARRA PASS THROUGH FUNDS

Green Infrastructure Needs Analysis

The Tennessee Department of Environment and Conservation intends to use the 40% ARRA pass through funds ($230,040) to contract with development districts in order to conduct a green infrastructure needs analysis for small communities in Tennessee.

The development districts will conduct a study that will accomplish four goals:

1. Identify communities in the development district with green infrastructure needs for storm water control
2. Identify the obstacles in meeting these needs (codes, ordinances, funds)
3. Identify communities willing to address these obstacles and install green infrastructure storm water controls
4. Identify and describe potential projects that can be pursued

Tennessee's smaller communities may not have the knowledge base or resources to implement green infrastructure improvements. The development districts, funded by the 40% ARRA pass through monies, will conduct a survey to identify suitable restoration projects involving green infrastructure in smaller communities that may become eligible for funding through the State Revolving Fund (SRF) in succeeding years. In addition to the identification of the projects, the project description will include an outline of the steps that must be taken for the project to become a reality and include a preliminary economic analysis of the likely benefits and costs for such a project.

The communities identified by the development district(s) will be in a stronger position to apply for these funds. These communities will also be on a priority list that will be used when funding opportunities arise (SEPs, NRDA, mitigation).

On April 2, 2009, the Division of Water Pollution Control announced the availability of 40% ARRA pass-thru funds in the amount of $230,040 to the current nine (9) Tennessee Development Districts in the form of a "Request for Proposals" letter. Responses are due to the division by no later than May 15, 2009, in order to insure full consideration. It was announced that funding is on a competitive basis and will be rated on the likelihood of accomplishing the following goals. Those being:

1.) Identify communities in the development district with green infrastructure needs for storm water control.

2.) Identify the obstacles in meeting these needs (codes, ordinances, funds, etc.)

3.) Identify communities willing to address these obstacles and install green infrastructure storm water controls.

Requests for proposal were sent to:

1.) Mr. John Bucy, Executive Director – Northwest Tennessee Development District

2.) Mr. Sam Edwards, Executive Director – Greater Nashville Regional Council

3.) Ms. Wendy Askins, Executive Director – Upper Cumberland Development District

4.) Ms. Susan Roberts Reid, Executive Director – First Tennessee Development District

5.) Mr. Terence Bobrowski, Executive Director – East Tennessee Development District

6.) Ms. Beth Jones, Executive Director – Southeast Tennessee Development District

7.) Mr. Joe M. Williams, executive Director – South Central Tennessee Development District

8.) Mrs. Evelyn C. Robertson, Executive Director – Southwest Tennessee Development District

9.) Mr. John Sicola, Executive Director – Memphis Area Association of Governments

Following the close of receipt of project proposals, the division will determine which projects can be awarded within the availability of funds.

EPA Region 4 staff will receive copies of the award letters. Additionally, copies of the contracts with the selected development districts will be sent to EPA following development and receipt of final signed contracts for inclusion in the work plan file.

Of nine (9) development districts contacted and asked to submit project proposals, only three (3) responded. The following three (3) project proposals were received and approved for consideration by the Division of Water Pollution Control review committee. These proposals are being included in Tennessee's 2009 ARRA work plan and are available for review and consideration for approval by EPA Region 4 staff.

The total amount of funds available for the 40% pass-thru requirement was made known to all development districts at the beginning of the process. That amount was $230,040. The three (3) proposals submitted totaled $232,011.43. This is $1,971.43 above the 40% required pass-thru level. However, this expenditure can be accommodated due to the fact that slightly less funds were required by the three (3) projects proposed by the division of water pollution control.

SOUTHEAST TENNESSEE DEVELOPMENT DISTRICT

American Recovery and Reinvestment Act

Section 604(b), Federal Clean Water Act

Project Proposal

Primary Contact: **Chuck Hammonds**

P.O. Box 4757

Chattanooga, TN 37405-057

Phone: 423.424.4264

Fax: 423.267.7705

E-mail: chammonds@sedev.org

In response to the Division of Water Pollution Control request for proposals (April 2, 2009), the Southeast Tennessee Development District is interested in developing a project that will serve the interests of the Division and provide much needed assistance to local governments in the region. The project will require a minimal amount of funding but provide the basis for long-term solutions to persistent stormwater problems. It will also provide the opportunity for suggesting "green" technologies for dealing with these problems.

Several counties and municipalities are currently struggling with stormwater issues. This is especially true for the many communities located at the base of the Cumberland Plateau Escarpment where runoff from Plateau area tends to overwhelm systems in the valley below. Among these communities are several in Hamilton and Rhea Counties that have established an informal Stream Bank Stabilization Taskforce to help develop solutions to their problems. The task force is composed of community leaders, staff from the Chattanooga regional office of TDEC's Water Pollution Control Division, TVA, NRCS, the Army Corp of Engineers, and others. Senator Bo Watson recently introduced Senate Joint Resolution 306 (attached) to formally establish "the North Hamilton County – Rhea County Creek Management Task Force" to deal with flooding and land use issues. This group will provide valuable assistance in the completion of the proposed project.

District staff members are also involved in assisting Spring City with a storm water problem in its central business district. The town is currently looking for options to ameliorate this problem and is willing to consider alternative proposals that include green infrastructure. Currently, the town does not have enough funds to deal with the problem, but this project may help identify solutions that will provide the basis for remediation efforts. This, in turn, will help identify funding sources.

There are many other communities throughout the Development District that are not required to have NPDES permits for stormwater discharges but have significant problems with runoff. Some of these communities have municipal separate storm sewer systems (MS4s) but have small populations that are below the threshold for NPDES requirements. However, many of these communities would likely welcome some assistance with determining methods to deal with stormwater issues before they are required to by regulation.

District staff members are heavily involved in helping small cities with revitalization efforts, which are primarily funded through the Tennessee Department of Transportation's Enhancement program. Traditionally, these funds are used to build sidewalks, add lighting and other amenities. This program provides the opportunity to integrate stormwater reduction and diversion techniques within plans for these projects. Green stormwater control systems, such as rain gardens and retention areas, can be incorporated into the design of these projects. Providing this information to local governments before they receive funding for Enhancement projects increases the likelihood of developing viable stormwater options. Consequently, this information will be provided to all local governments within the region.

The goals of this project will mirror those of the Division:

- Conduct a survey to identify communities with green infrastructure needs for stormwater control
- Identify obstacles to meeting these needs
- Identify communities willing to address these obstacles and install green infrastructure stormwater controls.
- Develop a specific implementation plan based on survey results

District staff will assess the needs of local governments and review existing stormwater ordinances that would allow local governments to encourage and/or require the implementation of green stormwater control methods. Staff will discuss these ordinances with each local government and offer assistance in tailoring an ordinance that is consistent with local needs.

Concurrently, competitive proposals will be solicited from qualified professionals to provide guidance to local governments in the development of "green" stormwater implementation plans. The contractor will subsequently follow up on information provided by District staff members and develop a specific set of recommendations.

Scope of Work - 2009

Quarter 1: July – Sept.

I. Request a meeting of the Stream Bank Task Force to determine needs for storm water in the following communities that have been heavily impacted by previous storm water problems.

II. Develop a *Request for Proposals* and send to qualified environmental professionals to help local governments with green stormwater planning. The next step will be to form a committee of Development District Board members at the June 2009 Board meeting to evaluate proposals, and institute a selection process. Consultant selection will occur at the earliest feasible time to allow consultants to work as closely with District staff as possible.

III. Contact local government, utility, transportation, and other officials in the following counties and cities. The purpose of these meetings will be to identify storm water control needs; determine if there are any obstacles to those needs; and identify communities willing to install green infrastructure stormwater controls.

Hamilton County

1. Falling Water
2. Bakewell
3. Sale Creek
4. Soddy-Daisy

Rhea County

1. Graysville
2. Dayton
3. Spring City

Bledsoe County

City of Pikeville

Sequatchie County

City of Dunlap

Marion County

1. City of Jasper
2. City of Kimball
3. City of New Hope
4. City of Monteagle
5. City of Powell's Crossroads
6. City of South Pittsburg
7. City of Whitwell

Grundy County

1. City of Palmer
2. Tracy City
3. Pelham Community

Prepare and submit the results of meetings and contacts in a detailed report.

Quarter 2: Oct. - Dec.

I. Contact local government, utility, transportation, and other officials in the following counties and cities:

Meigs County

Town of Decatur

McMinn County

1. Town of Calhoun
2. Town of Englewood
3. City of Englewood
4. City of Niota
5. Bradley County
6. City of Charleston

Polk County

1. Town of Benton
2. City of Ducktown
3. City of Copperhill

Quarter 3: Jan. – Mar. 2010

Provide consultants with all relevant information and allow time for them to evaluate stormwater options, meet with local governments, and prepare a report on their activities.

Quarter4: Apr. – Jun. 2010

Prepare and submit the results of meetings and contacts in a detailed report.

In addition a composite report will be completed for the entire project. The report will provide a contact list for each jurisdiction and a consultant report detailing specific green stormwater control needs and implementation plans.

EPA Questions & Answers

1. Does each proposed program activity support / promote economic stimulus in Tennessee? Please provide a description of any such economic stimulus.

   In many southeast Tennessee counties and cities, the lack of stormwater control processes has reduced the viability of local businesses. This is especially the case for business owners in small municipalities where the gradual increase in impervious surfaces led slowly to a marked increase in runoff. It often takes only one flooding event for a small business to close or move, and that impacts the economic health of the entire town.

   Flooding is not the only problem. Some municipalities are in a region where the design of existing development forces water to pool, creating situations where business literally cannot exist because septic systems will not function. The City of Whitwell, for instance, has pumped its septic tank seven (7) times in the last year due to water infiltration from runoff. At least partially due to this problem, there are only a few business establishments in the town and no industry.

   By providing the framework for stormwater control, many local communities will be able to effectively develop business and promote exiting properties that already have the infrastructure in place. Most of the economic development in the U.S. is derived from small business and entrepreneurs. According to the Small Business Administration, 60-80% of all new jobs are produced by small business. This project will provide the basis to allow this sector of the economy to find a foothold.

2. Does the proposed project directly create jobs or retain jobs that would be lost to budget shortfalls? Please describe and express the job creation or job retention in terms of a "full-time equivalent" (FTE). The FTE is calculated cumulatively as all hours worked divided by the total number of hours in a full-time schedule, as defined by the recipient.

   The project is likely to help with the retention of 4 to 8 FTEs as municipalities struggle to balance priorities. Utility workers whose jobs could be in jeopardy due to economic turbulence will likely retain a position in order to deal with stormwater issues. Although stormwater may be only a part-time occupation in most small cities, the combined hours of part-time workers is likely to provide an FTE figure in that range. In addition, consulting services will likely require 1-2 FTEs over the next year.

3. Does the project encourage future economic activity that may be anticipated as a result of the implementation of water quality planning projects including jobs created? Please estimate and describe how you derived the estimate.

   Future economic activity will be enhanced in several municipalities in the region because existing buildings will be available for business activities and not subject to flooding. Municipalities where these problems are known to exist include:

   Athens

Spring City

Graysville

Whitwell

Dunlap

Five to ten years after implementation, more businesses will be able to safely locate in central business districts where flooding is now a concern. Estimating one (1) business per municipality and two (2) persons per business, the minimum number of new jobs would be 10, including job retention. This is a conservative number for that time period and does not include other municipalities that are likely to have the same problems.

Re-localization and revitalization programs are part of the planning process for small municipalities. The location of a Volkswagen auto assembly plant in Chattanooga and a photovoltaics plant in Cleveland has prompted community leaders to initiate the development of a comprehensive planning process to deal with growth throughout the region. This process will be integrated with existing programs, such as the Dept. of Transportation's Enhancement program that provides funds to install sidewalks, lighting and landscaping infrastructure. The synergy among these different compatible programs should provide long-term job creation benefits to many of the small municipalities in the region.

4. Does the proposed program activity result in long-term public benefits by investing in environmental protection that will provide long-term economic benefits? Please describe type of economic stimulus (including jobs created and/or retained) and how you derived the long-term estimate. Relate the job creation to the amount of federal dollars spent for this proposed project.

   Developing methods to reduce the impact of stormwater on local public and private infrastructure will have a long-term benefit since measures taken to deal with the problem will result in physical structures such as pervious surface parking lots; berms, swales, and pooling areas; rain gardens; and finally the stormwater collection system. As stated previously, a minimum of 10 long-term jobs are likely to be attributed to this project, and if those jobs pay a minimum of $6.55 per hour (minimum wage), these workers' gross earnings would amount to $136,240.

5. Will the recipient of these grant funds agree to report quarterly?

   The Southeast Tennessee Development District agrees to provide quarterly reports on a schedule determined by the granting agency. SETDD provides quarterly reports to all of its funding agencies in a timely manner.

6. Will contractual parts be procured through a competitive process?

   Solicitations for contractual services under this program will be conducted through a competitive process that allows the selection of qualified contractors at the lowest cost.

7. Will the project be started and completed expeditiously (ARRA Section 1602) and be finished by the end of the project period?

   The project will be started and completed as expeditiously as possible. Development District staff members consistently provide services to local governments that have specific time-lines that must be met. The District has never failed to meet contract deadlines for other programs, including solid waste reports prepared by the District for all local governments and submitted to the Division of Solid Waste Management; reports to the Tennessee Advisory Commission on Intergovernmental Relations; and many other state and federal agencies.

8. Does the proposed project promote traditionally under-represented and disadvantaged communities (environment justice)?

   The project will provide support and community development opportunities to minority communities that are concentrated in municipal areas such as Pikeville, Etowah, and Jasper. In general, theses populations are located in the impacted areas rather than the surrounding rural parts of the region.

9. Will the project be implemented to address the transparency, accountability and reporting requirements of ARRA?

   The Development District has trained staff whose primary responsibility is to provide administrative support and make sure that all reporting requirements are met in conjunction with financial accountability. As a public agency, District information is freely available to the public, and the District has a web site to provide access to relevant materials. The District will follow all guidelines to make sure that policies of transparency and accountability are followed and that reports are prepared and submitted as required.

STATE OF TENNESSEE

GRANT BUDGET

GRANTEE NAME **SOUTHEAST TENNESSEE DEVELOPMENT DISTRICT**

GRANTEE ADDRESS **P.O. BOX 4757, 1000 Riverfront arkway**

CITY/STATE/ZIP **CHATTANOOGA, TENNESSEE 37405-0757**

Program Area: **ARRA Clean Water Act-TDEC-Water Pollution Control Division**

THE FOLLOWING IS APPLICABLE TO EXPENSE INCURRED IN THE PERIOD: JULY 1, 2009 THROUGH JUNE 30, 2010

POLICY	EXPENSE OBJECT LINE-ITEM CATEGORY	
03 Object	(detail schedule(s) attached as applicable)	
Line-item		
Reference		TOTAL
		PROJECT
1, 2	1. SALARIES, BENEFITS AND TAXES	$14,687
	Eight hours assessment time for each community plus an average travel time of 1 hour for a work write up for a total of 6 hours per jurisdiction. With a total of 36 jurisdictions, this amounts to 360 hours of staff time or 47 days of work at 7.75 hours per day (standard Development District accounting). 360 hours X $27 = $9,720.00. Staff time for report writing and analysis: 40 hours = $1,080.00. An estimated fringe benefits of 36% = $3,888	
4, 15	Professional Fees/Grant & Award	
5	Supplies	200
6	Telephone	150
7	Postage & Shipping	100
8	Occupancy: Project proportion of staff office space rent	1,500
9	Equipment Rental & Maintenance: Computer backup, copier maintenance, etc.	400
10	Printing & Publications	150
11, 12	Travel/Conferences & Meetings	783
	Meeting time/cost: $200.00. Travel: 30 miles X 36 jurisdictions X 0.54 = 583.20	
13	Interest	

14	**Insurance**	
16	**Specific Assistance to Individuals**	
17	**Depreciation**	
18	**Other Non-Personnel**	
20	**Capital Purchase**	
22	**Indirect Cost**	**3,680**
24	**In-Kind Expense**	
25	**Contractual**	**38,350**
26	**GRAND TOTAL**	**$60,000**

Greater Nashville Regional Council

Green Infrastructure Needs Analysis Grant Proposal

Submitted May 26, 2009

Purpose:

Identify suitable stormwater improvement projects involving green infrastructure in smaller communities that may become eligible for funding through the State Revolving Fund (SRF) or other programs in succeeding years. It is likely that the implementation of these projects will assist in the creation or retention of various jobs at the local level. The final product of this study will be the identification of cities with potential projects meeting the criteria set forth in this proposal.

Background:

Greater Nashville Regional Council (GNRC) is the regional planning and technical assistance agency working for 13 counties and 53 cities in upper middle Tennessee. Several counties within the region are experiencing some of the fastest growth in the country. In contrast, there are a number of cities that are small and lack staff as well as resources to properly address stormwater management issues brought about by moderate growth and lack of planning. These smaller communities are not able to take full advantage of available funding that can help them implement stormwater improvement projects utilizing green infrastructure.

This grant will allow GNRC to retain one staff member otherwise lost due to the elimination of another program.

Project Workplan

Task 1. Identify Target Communities and Potential Projects.

For the purpose of this stormwater green infrastructure needs analysis, small communities are defined as any city, town, or county with populations of +/- 10,000 or communities lacking adequate planning staff.

In this grant, GNRC will develop and conduct a survey to identify stormwater management needs for small communities within the region. The survey will request general information from the communities on stormwater issues, potential stormwater projects, and any interest they may have in developing stormwater projects utilizing green infrastructure. While the survey is in process, GNRC will also research and review any data pertaining to stormwater needs within the region. One such source is the Public Infrastructure Needs Inventory (PINI) which is compiled and annually updated by GNRC. Data collected from the survey will be

compiled for identifying a community's level of interest and potential projects. GNRC will then follow up with local officials to discuss differences in responses between survey and research result, to further refine the selection process.

Task 2. Identify the obstacles in meeting these needs (codes, ordinances, funds)

After developing a list of small communities with potential green infrastructure projects, GNRC will conduct onsite research to identify obstacles that may impede the implementation of green infrastructure development. These obstacles include, but are not limited to: economic conditions, codes and ordinances, as well as zoning and planning regulations that may need to be enacted or modified. Consultant(s) with appropriate expertise will be utilized to develop a list of model codes and ordinances structured to implementation of sustainable stormwater systems. The developed list of model codes and ordinances will be used to compare with the local codes and ordinances to determine their compatibility with green infrastructure stormwater management systems.

Task 3. Identify communities willing to address these obstacles and install green infrastructure stormwater controls.

GNRC will meet with local officials to present the findings and recommendations developed thus far. Presentation discussions will include: community stormwater issues, potential projects, and any obstacles that need to be resolved to qualify for any State or Federal funding that may become available. GNRC will inform local governments of the need to enact codes and ordinances dealing with stormwater management or perhaps modify existing regulations as well as the need to meet financial requirements associated with any grant or loan. In addition, GNRC will conduct informational workshops as needed with City Councils and Planning Commissions for communities to further explain the benefits of utilizing green infrastructure to address stormwater management problems.

Task 4. Identify and describe potential projects that can be pursued when funding becomes available.

GNRC in conjunction with consultant(s) will assist communities in identifying specific projects that meet State and Federal requirements for green infrastructure funding. The description of each project will include the location, type of green infrastructure proposed, anticipated benefits, and if possible a general cost estimate. A brief list of examples of the potential projects follows:

<u>Projects</u>:

A. Retrofit existing stormwater projects in areas where stormwater is a significant source of contamination.
B. Identification and removal of stormwater discharges into municipal sewer systems.
C. Demonstration of low-impact development stormwater management projects. Examples include: landscapes for stormwater, harvesting rainwater, and rain gardens.
D. Source control program activities such as erosion control projects involving plantings and drain stenciling.

Project Milestones

First Quarter:

Milestone - Identify Target Communities and Potential Projects.

Steps: A. Conduct mail survey of communities.

B. Research and review additional data sources for communities stormwater needs.

C. Assess community's interest based on mail survey and research.

D. Follow up on survey with local officials to further refine list of projects.

E. Submit first quarter report

Second Quarter:

Milestone - Identify obstacles to implementing projects

Steps: A. Conduct visual survey of potential project sites

B. Conduct review of codes, ordinances, and possible funding.

C. Develop a list of model codes and ordinances for green stormwater infrastructures.

D. Compare model and existing codes and ordinances.

E. Submit second quarter report

Third Quarter:

Milestone - Identify communities willing and able to overcome obstacles and comply with all State and Federal requirements.

Steps: A. Present findings and recommendations to local officials

B. Preliminary list of sites, for detailed evaluation

C. Discuss with local officials: projects, codes and ordinances, and funding

D. Conduct informational workshops as needed with City Councils and Planning Commissions

E. Submit third quarter report

Fourth Quarter:

Milestone - Identify specific projects that meet all requirements of this program and are ready for detailed planning, design, and implementation.

Steps: A. Work with Consultant(s) and local official to define specific projects

B. Develop description of each individual project selected.

C. Submit final report including specific projects to TDEC

Workplan Review Criteria

1. Within the GNRC region there are a number of small communities that have problems with stormwater management that hinder their ability to attract well planned residential, commercial, and industrial growth. Many of these problems can be solved using green infrastructure techniques that are being implemented in more urban areas but are not well known or available to smaller communities due to lack of staff, expertise and financial resources. This project will identify communities and specific actions that can be implemented to make them more livable, attractive and efficient.

2. This grant will allow GNRC to retain one employee that would be lost due to the elimination of another program. There is the likelihood that several jobs could be secured locally when the projects are implemented (construction, landscape, laborers, etc.).

3. There is potential to create or secure jobs in the planning, designing, and implementation phase and through long term growth stimulated by a more attractive, livable community. It is impossible to derive even an estimate of how many and of what type of jobs will be created.

4. The long-term benefits to communities implementing projects as a result of this program will be a more attractive and environmentally friendly place to live and work. Sound stormwater management results in cleaner and healthier streams, less flooding and a more efficient wastewater treatment system. These are all qualities that companies and families look far in selecting a place to live or conduct business.

   Not knowing where projects will be located, what type of project it will be or when it will be implemented makes it impossible to estimate how many and what type of jobs will be created.

5. The grant recipient administers a number of programs that require quarterly progress and financial reports and will do so with this project.

6. Contracts with outside consultants will be procured through a competitive process according to State and Federal requirements.

7. The applicant is ready to begin the program upon the approval of the Tennessee Department of Environment and Conservation (TDEC) and the Environmental Protection Agency (EPA). The project will be completed within one year unless otherwise required by the funding agency.

8. The project will be targeted to smaller communities that do not have the staff or financial resources to plan, fund or implement projects utilizing green infrastructure. Many do not have ordinances to manage run-off from construction sites or control improper development in floodplains, wetlands, steep slopes or other sensitive areas. Lower income citizens experiencing damage or property loss from flooding or other stormwater related occurrences often cannot afford to properly repair or rebuild and are forced to live in substandard housing. These are often minorities or other citizens that traditionally work in low paying jobs that are the first to be eliminated when economic times are hard.

9. All transparency, accountability, and reporting requirements of ARRA will be strictly adhered to by GNRC and any consultants hired to work on the project.

Greater Nashville Regional Council

FY 2010 TDEC 604(b) Project Budget

Salary (1755 hours @ $18.54 - Jeff)	32,538	
Salary (409.5 hours @ $38.81 - Phil)	15,893	
Fringe & Release (47.85773%)	15,572	
Sub Total		**$64,002**
Travel/Conf/Meetings	2,868	
Postage	200	
Supplies	250	
Equipment & Maintenance	1,000	
Printing & Publishing	200	
Communications	1,050	
Consultants	20,000	
Admin (31.9209%)	20,430	
Total		**$110,000**

FIRST TENNESSEE DEVELOPMENT DISTRICT

American Recovery and Reinvestment Act

Section 604(b), Federal Clean Water Act

Project Proposal

2009-2010 Water Quality Management Planning Grant

NAME OF PROJECT:

Identifying Green Stormwater Control Needs in Rural Communities in the First Tennessee Development District

LEAD ORGANIZATION:

First Tennessee Development District

COOPERATING ORGANIZATIONS:

Baileyton	Greene County	Mount Carmel	Tusculum
Bluff City	Greeneville	Mountain City	Unicoi County
Bulls Gap	Hancock County	Mosheim	Unicoi
Carter County	Hawkins County	Rogersville	Watauga
Church Hill	Jonesborough	Sneedville	
Erwin	Johnson County	Surgoinsville	

The First Tennessee Development District was established in 1966 as a comprehensive planning and development agency for local governments. The First Tennessee Development District serves 8 counties and 20 municipalities in Northeast Tennessee. A major focus of the Development District has been developing and preserving regional partnerships which aid in implementing programs throughout the region. Many of the communities and counties in the First Tennessee Development District are some of the most rural communities in the State of Tennessee and not involved in major stormwater control efforts found is the District's larger cities and counties. Annually, the District works closely with all of the member governments implementing a variety of

environmental management programs. The Development District is also responsible for organizing and coordinating the first regional stormwater group in the State in response to the EPA's Phase II Stormwater Regulations. Members of this group include Johnson City, Kingsport, Bristol, Elizabethton and Sullivan County.

INTRODUCTION

Background

Each year the First Tennessee Development District conducts an infrastructure needs survey in each city and county in the District. Although this broad survey indicated a growing need for stormwater infrastructure in our communities, this proposed project will identify targeted specific stormwater infrastructure needs in each community. Among the list of needs identified in the District's annual infrastructure survey are water and sewer infrastructure, transportation projects, solid waste management projects and most recently, several stormwater infrastructure needs were highlighted in the survey by several communities. Although this process does not identify potential funding mechanisms for projects, it does however highlight the growing infrastructure needs in our communities and the rising costs with meeting those needs.

Most of the District's cities and counties are not regulated by the EPA's Stormwater Phase II program and therefore have not been focused on improving this infrastructure until recently. Those communities in our District included in the Phase II program have been leaders in the State in implementing all aspects of the Phase II regulations.

Problem

This Development District has identified several communities in our area that list stormwater infrastructure as a growing need for local governments. This was noted most recently in the District's annual infrastructure survey funded by the Tennessee Advisory Commission on Intergovernmental Relations (TACIR). However, this survey does not identify specific needs, obstacles in meeting those needs, solutions to these obstacles, costs or implementation schedule.

Communities within the District are becoming increasingly interested in developing a more "green" approach to infrastructure development in the last year. The Federal effort to provide funding for "green" technology will provided the necessary funding for communities in our Development District to upgrade and install "green" stormwater control measures. Although we have identified the need exists for "green" infrastructure for stormwater control in our District, funding for these types of projects has not been

available until the Amercian Recovery and Reinvestment Act of 2009 was passed earlier this year. This funding will allow rural, cash strapped communities in our area to engage in a thorough process of identifying and developing a program to meet stormwater control needs with “green” technology at the forefront.

IDENTIFICATION OF PROJECT

Project Location

The project will be located in the counties and municipalities of the First Tennessee Development District. The District is located in northeast Tennessee and covers 8 counties that include Carter, Greene, Hancock, Hawkins, Johnson, Sullivan, Unicoi and Washington.

The service area is approximately 2,895 square miles with a total population of approximately 494,938. There are 20 municipalities in the District. Around 59% of the District’s population is considered living in rural communities (outside municipal boundaries). The project will primarily target these communities in an effort to identify infrastructure needs for stormwater control. As these communities and needs are identified, the project target area will be slightly refined to include only those communities that have infrastructure needs, identifiable obstacles for meeting those needs and a willingness to address those needs. We will only include those communities where results and positive outcomes can be documented and a successful implementation plan can be developed.

Project Leader

The project leader is Christopher Craig, Director of Environmental Programs with the First Tennessee Development District. Chris has over 12 years experience in water quality assessment, regional planning issues, and conservation issues. He has been with the Development District for more than 12 years. While at the First Tennessee Development District, Chris has served as project manager on a water quality assessment project funded by the Tennessee Department of Environment and Conservation 604(b) program. Through a partnership with East Tennessee State University, the project involved sampling a number of sites in tributaries of Boone Lake, including Sinking Creek. Chris has also served as project manager on watershed based projects in the Sinking Creek and Cash Hollow watersheds funded by the Tennessee Department of Agriculture 319 program and Tennessee Department of Environment and Conservation 604(b) program. Most recently, he served as project coordinator on the Watauga Watershed Alliance project funded by the Department of Environment and Conservation in 2006. In his role with the Development District, Chris has experience in building consensus among stakeholders and coordinating activities among various local agencies and local governments. The Development District has successfully implemented 3 projects since 1997 funded by the 604(b) program and therefore has the experience necessary to adequately manage this project.

Project Objective

The objective of the project is to work with cities and counties in the First Tennessee Development District to develop an inventory of infrastructure needs related stormwater control with an emphasis on green technology. Once these needs have been identified, an implementation strategy will be developed for all communities willing to address obstacles and pursue an implementation strategy.

The primary target group for this project will be communities and counties not currently included in the northeast Tennessee Regional Stormwater Planning Group. This group was formed several years ago in response to the EPA Stormwater Phase II regulations. The target group will be mainly rural communities lacking the capability of developing a strategy of identifying stormwater control needs and implementation plan. The overall objectives of the project and desired outcome is:

- To identify stormwater control needs for each city/county in the Development District.
- Identify obstacles for meeting these needs.
- Determine solutions to these obstacles.
- Hire a qualified consultant to develop a specific list of recommended stormwater control strategies, including cost estimates for each community surveyed.

GRANT RELATED QUESTIONS

1. **Does each proposed program activity support / promote economic stimulus in Tennessee? Please provide a description of any such economic stimulus.**

   The proposed stormwater control infrastructure survey project will require the services of an environmental consulting company initially. Upon completion of the project, an implementation plan will be developed and communities are likely to employ construction companies to install “green” infrastructure to manage stormwater.

2. **Does the proposed project directly create jobs or retain jobs that would be lost to budget shortfalls? Please describe and express the job creation or job retention in terms of a “full-time equivalent” (FTE). The FTE is calculated cumulatively as**

all hours worked divided by the total number of hours in a full-time schedule, as defined by the recipient.

This project will create at least 1 FTE to oversee and administer the project. Consultants will also be used to develop one phase of the project which is estimated to be approximately .5 FTE. The second phase of this project which is construction of BMP's will create numerous FTE's throughout the Development District.

3. **Does the project encourage future economic activity that may be anticipated as a result of the implementation of water quality planning projects including jobs created? Please estimate and describe how you derived the estimate.**

   At the conclusion of the project, an implementation plan will be developed by a certified environmental consultant that will identify recommendations for stormwater infrastructure BMP's. This phase of the project will likely result in several construction-type jobs created.

4. **Does the proposed program activity result in long-term public benefits by investing in environmental protection that will provide long-term economic benefits? Please describe type of economic stimulus (including jobs created and/or retained) and how you derived the long-term estimate. Relate the job creation to the amount of federal dollars spent for this proposed project.**

   Identifying needs within stormwater infrastructure in our communities, as this project is proposed, will eventually lead to mitigating measures to meet these needs. One of the most common problems associated with stormwater control, is infiltration is sanitary sewer systems. This issue increases treatment costs to local governments and therefore increases costs to the public. This project will identify potential solutions to issues like this and therefore provide a long-term economic benefit to the public. We believe the amount of federal dollars requested for this proposed project will be far exceeded to the environmental and economic benefit to be gained by our communities. The proposed jobs to be created during various phases of this multi-year process (i.e. survey and implementation) will also provide immeasurable benefit our communities.

5. **Will the recipient of these grant funds agree to report quarterly?**

   Quarterly reports will be completed as required by the Tennessee Department of Environment and Conservation and the U.S. Environmental Protection Agency.

6. **Will contractual parts be procured through a competitive process?**

   All contractual work associated with this project will be procured through a competitive process and in compliance with State purchasing regulations.

7. **Will the project be started and completed expeditiously (ARRA Section 1602) and be finished by the end of the project period?**

   This project will be ready to begin within a few weeks of the contract signature date. Barring any unforeseen circumstances, the project will be completed in the timeframe specified in the contract.

8. **Does the proposed project promote traditionally under-represented and disadvantaged communities (environment justice)?**

The project will be implemented in each county in the First Tennessee Development District. Many of these counties experience relatively high poverty rates typical of most Appalachian areas. The percentage of persons at or below the poverty level range from 14% to 29% county-wide. These rates are much higher in specific communities. Furthermore, several of the communities in the District have minority populations above 5%. Although not considered and environmental justice issue, the District's counties have recently seen unemployment rates continue to rise to as high as 12-15% in one county.

9. Will the project be implemented to address the transparency, accountability and reporting requirements of ARRA?

As a public entity and "political subdivision of the State", the First Tennessee Development District is in compliance with all public open records laws, financial auditing requirements, etc. The District reports quarterly and annually to all state and federal granting agencies we are involved with. The Development District will provide assurance that all of the transparency, accountability and reporting requirements of ARRA will be met during the entire project period.

SCOPE OF WORK

The following table indicates the proposed schedule of the project work elements:

MONTH	1	2	3	4	5	6	7	8	9	10	11	12
Review TACIR Survey	X											
Develop targeted stormwater infrastructure survey		X										
Meet with local officials	X	X	X									
Host stormwater workshop			X									
Compile list of needs					X							
Continue to meet with local officials				X	X	X	X	X	X	X	X	X
Identify obstacles								X				
Identify communities willing to install green stormwater controls										X		
Hire Qualified Consultant											X	

Timetable is based on the start date of the contract. Month 1-12 refers to the start date of the contract. i.e. Month 1 = first month of the contract.

Measures of Success

- The Development District staff, through a process of meetings with local elected officials, public works staff and staff engineers, will develop a list of communities in the District that currently have green infrastructure needs for stormwater control.

- From this list of needs, obstacles will be identified in each community that may potentially impeded progress towards future implementation of stormwater controls.

- Finally, communities willing to overcome obstacles and install stormwater controls will be identified along with a preliminary implementation schedule and costs estimates for each participating locality.

WORK PRODUCTS

1st Quarter:

Review First Tennessee Development District - Tennessee Advisory Commission on Intergovernmental Relations (TACIR) infrastructure survey.

Coordinate Green Stormwater Infrastructure Technology workshop for government officials, conducted by stormwater expert (consultant).

Meet with staff engineers, elected officials and public works staff, in each county and city in the project target area, to begin development of stormwater infrastructure needs assessment.

Submit quarterly progress report to the Tennessee Department of Environment and Conservation.

2nd Quarter:

Compile District-wide list of stormwater infrastructure needs.

Continue to meet with project target area officials to determine viability of using "green" technology to meet infrastructure needs.

Submit quarterly progress report to the Tennessee Department of Environment and Conservation.

3rd Quarter:

Identify obstacles to using "green" technology to meet needs and work with local governments to develop solutions in overcoming these obstacles.

Submit quarterly progress report to the Tennessee Department of Environment and Conservation.

4th Quarter:

Identify communities willing to overcome obstacles and install "green" stormwater infrastructure.

Hire certified environmental consultant to develop implementation plan with a list of BMP recommendations.

Submit final report to the Tennessee Department of Environment and Conservation. Final report will include list of communities willing to move forward, stormwater infrastructure needs, implementation obstacles and associated costs.

PRELIMINARY COST ESTIMATES

Personnel (fringe/admin) …… $50,011.43
(amount includes project oversight, development of quarterly reports and final report, data collection and carrying out the project's scope of work).

Travel…… $3,500.00
(travel to meetings with local government officials and staff)

Environmental Consultant…….. $5,500.00
(develop implementation plan and list of recommendations)

Misc…….. $1,000.00
(printing, postage, etc.)

TOTAL…….. $60,011.43